Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE

AMERICAN NATURALIST,

AN ILLUSTRATED MAGAZINE

OF

NATURAL HISTORY.

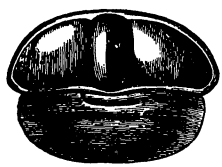
EDITED BY

A. S. PACKARD, JR. AND F. W. PUTNAM.

R. H. WARD,

ASSOCIATE EDITOR, DEPARTMENT OF MICROSCOPY.

VOLUME VII.



SALEM, MASS.

PEABODY ACADEMY OF SCIENCE.

1873.

Entered, according to Act of Congress, in the year 1873, by the
PEABODY ACADEMY OF SCIENCE,
in the Office of the Librarian of Congress, at Washington.

PRINTED AT
THE SALEM PRESS, F. W. PUTNAM & CO.,
Salem, Mass.

CONTENTS OF VOLUME VII.

	Page
NOTES ON THE RIGHT AND SPERM WHALES. By Prof. N. S. Shaler,	1
OUR POISONOUS PLANTS. By W. W. Bailey. *Illustrated*,	4
A GLIMPSE AT COLORADO AND ITS BIRDS. By C. E. Aiken,	13
HARVEST MITES. By Prof. C. V. Riley. *Illustrated*,	16
ON THE GENETIC RELATIONS OF THE CETACEANS AND THE METHODS INVOLVED IN DISCOVERY. By Theodore Gill, M. D., Ph. D.,	19
COLORS OF VEGETATION. By Prof. D. S. Jordan,	65
ON THE LIMITS OF THE CLASS OF FISHES. By Theodore Gill, M. D., Ph. D.,	71
NOTES ON THE HABITS OF CERTAIN CRAWFISH. By Charles C. Abbott, M. D.,	80
THE RATTLE OF THE RATTLESNAKE. By Prof. Samuel Aughey,	85
COLOSSAL CUTTLEFISHES. By A. S. Packard, Jr. *Illustrated*,	87
ON THE POTTERY OF THE MOUND-BUILDERS. By J. W. Foster, LL. D. *Illustrated*,	94
CONTROLLING SEX IN BUTTERFLIES. By Mrs. Mary Treat,	129
THE FLYING SQUIRREL. By Prof. G. H. Perkins,	132
INDIAN NETSINKERS AND HAMMERSTONES. By Charles Rau. *Illustrated*,	139
THE FOSSIL MAMMALS OF THE ORDER DINOCERATA. By Prof. O. C. Marsh. *With two plates*,	146
NOTES ON THE VEGETATION OF THE LOWER WABASH VALLEY. By Robert Ridgway,	154
THE GIGANTIC MAMMALS OF THE GENUS EOBASILEUS. By Prof. E. D. Cope,	157
A VIVIPAROUS FLY. By Rev. Samuel Lockwood, Ph. D. *Illustrated*,	193
THE PRAIRIE BIRDS OF SOUTHERN ILLINOIS. By Robert Ridgway,	197
OCCURRENCE OF IMPLEMENTS IN THE RIVER DRIFT AT TRENTON, NEW JERSEY. By Charles C. Abbott, M. D. *Illustrated*,	204
COMPARISON OF THE GLACIAL PHENOMENA OF NEW ENGLAND WITH THOSE OF EUROPE. By A. S. Packard, Jr.,	210
THE COTTON CATERPILLAR. By Lewis A. Dodge. *Illustrated*,	213
ON THE GENUS TINOCERAS AND ITS ALLIES. By Prof. O. C. Marsh,	217
THE WINTER STATE OF OUR DUCKWEEDS. By Prof. T. D. Biscoe. *Illustrated*,	257
THE INFLUENCE OF INSECT-AGENCY ON THE DISTRIBUTION OF PLANTS. By T. Buchanan White, M. D.,	268
RELICS OF A HOMESTEAD OF THE STONE AGE. By Charles C. Abbott, M. D.,	271

THE GEYSERS OF MONTANA. *Illustrated.* 279
ON SOME OF PROFESSOR MARSH'S CRITICISMS. By E. D. Cope. *With two plates,* 290
NEW PLANTS OF NORTHERN ARIZONA AND THE REGION ADJACENT. By Sereno Watson, ... 299
ON THE DATES OF PROFESSOR COPE'S RECENT PUBLICATIONS. By Prof. O. C. Marsh, ... 303
TINOCERAS AND ITS ALLIES. By Prof. O. C. Marsh, ... 306
SOME UNITED STATES BIRDS, NEW TO SCIENCE, AND OTHER THINGS ORNITHOLOGICAL. By Dr. Elliot Coues, U.S.A. *Illustrated,* . 321
THE CONSERVATION AND CORRELATION OF VITAL FORCE. By J. T. Rothrock, M. D., ... 332
THE GAME FALCONS OF NEW ENGLAND. THE PIGEON HAWK. By William Wood, M. D., ... 340
ON A SECOND EDITION OF THE GEOLOGICAL MAP OF THE WORLD. By Jules Marcou, ... 345
THE PRAIRIE WOLF, OR COYOTÉ; CANIS LATRANS. By Dr. Elliott Coues, U. S. A., ... 385
THE IRREGULAR MIGRATIONS OF BIRDS. By T. Martin Trippe, . 389
DISCOVERY OF AN OCTOPUS INHABITING THE COAST OF NEW ENGLAND. By Prof. A. E. Verrill. *Illustrated,* 394
THE HOMOLOGIES OF PEDICELLARIÆ. By Alexander Agassiz. *Illustrated,* 398
PHYLLOTAXIS OF CONES. By Prof. W. J. Beal, ... 449
ON THE DISTRIBUTION OF CALIFORNIAN MOTHS. By A. S. Packard, Jr., ... 453
ON THE STATUS OF ARISTOTLE IN SYSTEMATIC ZOOLOGY. By Theodore Gill, M. D., Ph. D., ... 458
SENSITIVE STAMENS IN PORTULACA. By Prof. C. E. Bessey, . 464
STRIÆ ON MOUNT MONADNOCK. By G. A. Wheelock, ... 466
CONTROLLING SEX IN BUTTERFLIES. By Chas. V. Riley, M. A., . 513
THE FLORA OF THE DISMAL SWAMP. By Prof. J. W. Chickering, Jr., 521
INJURIOUS AND BENEFICIAL INSECTS. By A. S. Packard, Jr. *Illustrated,* 524
THE RELATION BETWEEN THE COLOR AND GEOGRAPHICAL DISTRIBUTION OF BIRDS. By Robert Ridgway, ... 548
SCIENCE IN AMERICA AND MODERN METHODS OF SCIENCE. By Dr. J. Lawrence Smith, ... 577
ON SOME NEW FORMS OF AMERICAN BIRDS. By Robert Ridgway, 602
ON THE OVIPOSITOR OF THE YUCCA MOTH. By Prof. Chas. V. Riley, 619
THE STRUCTURE AND GROWTH OF DOMESTICATED ANIMALS. By Prof. Louis Agassiz. *Illustrated,* 641
ON STAUROLITE CRYSTALS AND GREEN MOUNTAIN GNEISSES OF THE SILURIAN AGE. By Prof. J. D. Dana, ... 658
NOTE ON BUFO AMERICANUS. By Rev. Dr. Thomas Hill, . . 660
ON SECTION AVICULARIA OF THE GENUS POLYGONUM. By Sereno Watson, ... 662

THE STRUCTURE OF THE SCALES OF LEPISMA SACCHARINA. By G. W. Morehouse, ... 666
THE NORTH AMERICAN GOATSUCKERS. By David Scott, . . 669
FARTHER OBSERVATIONS ON THE EMBRYOLOGY OF LIMULUS, WITH NOTES ON ITS AFFINITIES. By A. S. Packard, Jr., M. D., . 675
ON A REMARKABLE WASP'S NEST FOUND IN A STUMP IN MARYLAND. By P. R. Uhler, ... 678
THE FERTILIZATION OF FLOWERS BY INSECTS AND THEIR MUTUAL ADAPTATION FOR THAT FUNCTION. By A. W. Bennett, . . 680
OBSERVATIONS ON THE SUNDEW. By Mrs. Mary Treat, . . . 705
THE SLATES OF THE TACONIC MOUNTAINS OF THE AGE OF THE HUDSON RIVER OR CINCINNATI GROUP. By Prof. J. D. Dana, . 708
HINTS FOR THE PROMOTION OF ECONOMIC ENTOMOLOGY IN THE UNITED STATES. By John L. LeConte, M.D., ... 710
NOTES ON THE HONEY-MAKING ANT OF TEXAS AND NEW MEXICO. By Henry Edwards, ... 722

REVIEWS AND BOOK NOTICES.

Archæological Collections in America. p. 29. Revision of the American Tyrant Flycatchers. p. 35. Monograph of the Spheniscidæ. p. 38. Dubois' Conspectus. p. 40. New England Ornithology. p. 42. Annals of Bee Culture. p. 43. Underground Treasures; how and where to find them. p. 44. The Embryology of Fossil Cephalopods. p. 104. Life Histories of our Butterflies and Moths. p. 108. A Hand-book of British Fungi. p. 110. The Geology of the Sea Bottom. p. 160. Hand-book of British Birds. p. 163. The Birds of Florida. p. 165. The Sciopticon Manual. p. 166. Caliban: the Missing Link. p. 219. Ornithology of the West. p. 221. Intermembral Homologies. p. 223. Revision of the Echini. p. 224. African Ornithology. p. 226. New Species of American Moths. p. 227. Illustrations of North American Entomology. p. 227. The Forms of Water. p. 228. Physics and Politics. p. 228. Popular Science Monthly. p. 229. Half Hour Recreations in Popular Science. p. 230. A New Theory of the Origin of Species. p. 231. A Text-book of North American Ornithology. p. 306. Geology of Montana. *Illustrated.* p. 352. Recent Contributions to American Geographical Science. p. 361. New Avian Subclass. p. 364. The Depths of the Sea. *Illustrated.* p. 406. Color-variation in Birds Dependent upon Climatic Influences. p. 415. Late Local Lists. p. 418. Entomology in Missouri. *Illustrated.* p. 471. The Tineids of North America. p. 478. Antiquities of the Southern Indians. p. 555. The Childhood of the World. p. 559. Catalogue of the Phænogamous and Vascular Cryptogamous Plants of Canada and the Northeastern Portion of the United States. p. 560. Bulletin of the Buffalo Society of Natural Sciences. p. 560. Prehistoric Races of the United States. p. 623. Classification of North American Beetles. p. 626. New North American Beetles. p. 627. The Human Brain. p. 684. Infusorial Life. p. 685. The Scenery of the Rocky Mountains and its Origin. *Illustrated.* p. 726. Elements of Physical Manipulation. p. 736. The Spectroscope. p. 737.

BOTANY.

Past Vegetation of the Globe. p. 44. Seeds as Projectiles. p. 45. How the Buffalo Grass Disappears. p. 46. Hepaticæ Cubenses Wrightianæ. p. 46. A Grand Herbarium. p. 46. Second Growths in Trees. p. 111. The Horse Disease. p. 167. The Cretaceous Flora of North Greenland. p. 167. Cultivated Wheat in a Bone Cave. p. 168. Cultivation of California Roots and Bulbs. p. 232. On Drought in its Relation to Winter-killed Trees. p. 234. Influence of Foreign Pollen on the Parent Plant. p. 236. A Blue Anagallis. p. 309. Epigæa repens. p. 310. Dimorphic Flowers of the Ipecac Plant. p. 310. Iodine in the Determination of Fungi. p. 310. A New Fly-trap. p. 311. Coloring and Drying of Natural Flowers. p. 365. The Influence of Colored Light on Assimilation by Plants. p. 365. Microscopic Photography of Vegetable Tissues. p. 366. Effect of Coal-gas upon Trees and Shrubs. p. 366. Plants New to Gray's Manual. p. 366. Supposed American Origin of Rubus Idæus. p. 422. Botanical Notelets. p. 422. On Cross-fertilization as Aided by Sensitive Motion in Musk and Achimenes. p. 478. Nardosmia palmata. p. 480. The Uses and Origin of the Arrangements of Leaves in Plants. p. 481. The Fertilization of Grasses. p. 561. Structure and Propagation of Lichens. p. 562. Cleistogenous Flowers in Viola striata. p. 563. Sphagnum and Hypnum Peat. p. 563. Flowering of Aplectrum. p. 627. A Yew Flowering in Winter. p. 628. Variations in Medeola and Uvularia. p. 629. A New Ballast Waif. p. 629. Perforation of Gerardia pedicularia by Bees. p. 689. The Connecticut Valley Botanical Society. p. 690. Herbarium Paper. p. 691. Lithospermum longiflorum only L. angustifolium. p. 691. Rhexia Virginica L. p. 692. Cleistogenous Flowers. p. 692. Sensitiveness of the Leaves of Dionæa and Drosera. p. 737. Variety in the form of Flowers in the same Species. p. 739. Composition of the Puff-ball. p. 739. Nesæa verticillata. p. 739. Calycera balsamatifolia. p. 740. Perforation of Gerardia by Bees. *Illustrated.* p. 740.

ZOOLOGY.

Cemiostoma again. p. 47. The Slaughter of the Buffalo. p. 113. A Partial Comparison of the Conchological Faunæ of Portions of the Atlantic and Pacific Coasts of North America. p. 114. Collurio Ludovicianus. p. 115. Raccoon Fox. p. 115. The Spike-horned Muledeer. 169. Does the Pelican Feed its Young with its own Blood? p. 170. Nest, Eggs and Breeding Habits of the Vermilion Fly-catcher. p. 170. Distribution of the Helicidæ in the Sandwich Islands. p. 171. Harlan's Hawk and the Mexican Cormorant. p. 172. Note on the Dates of some of Prof. Cope's Recent Papers. p. 173. The Sound Produced by the Death's Head Moth. p. 173. Mode of Increase of the Long Bones. p. 174. Meadow Lark with Four Legs. p. 175. When is Sex Determined? *Illustrated.* p. 175. A New Species of Butterfly from Florida. p. 177. The Ribbon Seal of Alaska. p. 178. A New Species of Sparrow. p. 236 Instance of Sagacity and Affection in a Dog. p. 237. The Food of Diptera. p. 238. Note on Cassin's Pyrrhula. p. 239. Hyla Pickeringii in Winter.

p. 239. Application of the Darwinian Theory to Bees. p. 239. The Thick-billed Guillemot. p. 240. Prof. Cope's Cave Crustaceans. p. 244. A Four-legged Rock Lark. p. 311. Births of Animals in the Central Park Menagerie. p. 312. Phosphorescence. p. 313. The Game Birds of the Northwest. p. 314. A Remarkable Monstrosity. *Illustrated.* p. 367. Swarming of a Brood of Winged Ants. p. 369. Habits of the Cut Worm. p. 372. Composition of Salmon. p. 372. The Diminution of Food Fishes. p. 423. The Young Animal and Protection. p. 425. The White-fronted Owl in Canada. p. 427. Variation in the Tarsal Envelope of the Bald Eagle. p. 429. The Colorado Potato Beetle Varying its Food. p. 430. The Senses of Sight and Hearing of the Wild Turkey and the Common Deer. p. 431. The Ant-lion. p. 432. Classification of the Coleoptera. p. 432. Do Rattlesnakes Climb Trees? p. 433. Destruction of Dragon-flies by Birds. p. 433. Bees and King-birds. p. 434. Color of the Eggs of Caprimulginæ. p. 434. More Monsters. p. 435. The Depths of Mid Ocean. p. 436. A Cat's Jump. p. 436. Œstrus hominis in Texas. p. 437. Agricultural Ants. p. 437. Metamorphoses of Butterflies. p. 437. Spontaneous Division in Starfishes. p. 481. Habits of a Species of Sorex. p. 483. Aleutian Cephalopods. p. 484. Criticism on an Observation of Prof. Thomson on Certain Sponges, etc. p. 485. Embryology of the Lepidoptera. p. 486. The Purring of the Cat. p. 487. The "Willow Wands" from Burrard's Inlet. p. 488. Absence of Eyes in Crustacea. p. 489. Ocelli in Butterflies. p. 490. On a Habit of a Species of Blarina. p. 490. Births at the Central Park Zoological Garden. p. 491. Generation of Eels (Anguillæ). p. 492. Anatomy of the King Crab. p. 492. The Rose-breasted Grosbeak. p. 493. Canaries Nesting. p. 493. An Aquatic Bombycid Moth. p. 493. The Education of Apes. p. 494. Faulty Instinct in a Cat. p. 494. Variation in Dentition. p. 495. How to Clean the Euplectella. p. 496. Woodpeckers Tapping Sugar Trees. p. 496. The White-rumped Shrike. p. 497. Tadpoles in Winter. p. 497. The Golden-winged Woodpecker. p. 498. Ornithological Queries. p. 498. Mode of Egg-laying of Agrion. p. 498. Habits of Monohammus dentator. p. 498. The Painted Bunting. p. 500. New North American Hymenoptera. p. 500. Centronyx "ochrocephalus" Aiken. p. 564. Who first Determined the True Position of Hyalonema? p. 565. Passage of Specific Characters from one Genus to another. p. 566. Occurrence of the Rock Wren in Iowa. p. 566. The Preservation of the Lower Animals. p. 630. The Avi-fauna of Colorado. p. 631. Malformations. p. 632. The "Willow Wands" from Burrard's Inlet. p. 633. The Kingfisher. p. 634. The "Horned Toad." p. 634. The Black Snowbird breeds on the Graylock Range. p. 634. Addition to the Avi-fauna of America. p. 634. Notes on some of the Rarer Birds of New England. p. 692. On the Migration of Certain Animals as influenced by Civilization. p. 693. Notes on two little known Birds of the United States. p. 695. Discovery of a Tardigrade. p. 740. Discovery of the Basal Joint of the Legs of Trilobites. p. 741. Ancon or Otter Sheep. p. 742. Crows and Ravens. p. 743. A Note Personal. p. 744. Occurrence of a Deep Sea Floridan Coral near Cape Cod. p. 744. The Missouri Skylark. p. 745. Range of the

Eared Grebe. p. 745. Snowbird. p. 745. Influence of Locality upon the Colors of Birds and Animals. p. 746. Mimicry in Snakes. p. 747. Notice of a Rare Bird. p. 748. Insect Galls. p. 749. The Olive-sided Flycatcher. p. 750. Another Monster. p. 750. Range of the Geococcyx Californianus. p. 751. The Caribou on Lake Superior. p. 751. Chimney Swallow; Change in Place of Nesting. p. 751.

GEOLOGY.

Proboscidians of the American Eocene.—Correction. p. 49. Return of the Yale College Expedition. p. 49. Notice of a New and Remarkable Fossil Bird. p. 50. Knowledge of Petroleum in Pennsylvania in 1771. p. 50. On an Eocene Genus Allied to the Lemurs. p. 51. Fossil Monkeys. p. 51. On some of Prof. Cope's Recent Investigations. p. 51. Discovery of Extinct Mammals in the Victoria Caves, Settle, Yorkshire. p. 52. On a New Sub-class of Fossil Birds (Odontornithes). p. 115. Fossil Quadrumana in the Eocene of Wyoming. p. 179. The Eobasileus again. p. 180. On the Tusk of Loxolophodon cornutus. p. 315. Glacial Fossils in Maine. p. 373. On a Few Mineral Localities which are not mentioned in the Books. p. 635. The Glades of Maryland. p. 636. Bowlders. p. 636. The Fossils of Colorado. p. 752. Paucity of Life in Oceanic Areas. p. 753. The Connecticut Valley in the Helderberg Era. p. 755.

ANTHROPOLOGY.

Change in the Form of Skulls with Age. p. 117. Are They Twisting Stones? p. 180. Collections of Swiss Lacustrine Relics. p. 182. Antiquity of Man in America. p. 245. Existence of Man in the Miocene. p. 315. Prehistoric Culture of Flax. p. 374. Indian Netsinkers in New Jersey. p. 375. Antiquity of Man in America. p. 376. An Indian Carving. *Illustrated.* p. 438. Discovery of a New Human Skeleton of the Palæolithic Epoch in Italy. p. 439. Note on a Collection of Skin Scrapers from New Jersey. *Illustrated.* p. 500. The Age of the Famous Guadeloupe Skeleton. p. 636. Indian Rope and Cloth. p. 755. An Error Corrected. p. 756.

MICROSCOPY.

Microscopy at the Vienna Exposition. p. 52. A New Accessory Stage. *Illustrated.* p. 53. Magnifying Power of Objectives. *Illustrated.* p. 53. Amphipleura pellucida by Moonlight. p. 55. The Study of Lichens. p. 55. Misnaming Objectives. p. 57. New York Uncinulæ. p. 58. Staining Vegetable Tissues. p. 59. A Field-stage for Clinical Microscopes. p. 118. Pigott's "Searcher" in the Binocular. p. 118. Under-corrected Objectives. p. 118. Microscopy in New Jersey. p. 119. Determination of Powers in the Compound Microscope. p. 119. Sections of Insects. p. 119. Staining Tissues. p. 119. Preparing Palates of Mollusks. p. 120. Mounting Entomostraca. p. 120. The Horse Disease. *Illustrated.* p. 120. Organisms in Chicago Drinking Water. p. 123. Pine Pollen in Lake Michigan. p. 123. Sections of the Organs of Hearing. p. 183. Probable Nature of the Nerve Current. p. 184. Insects' Feet as carriers of Dirt. p. 186.

Circulation in Insects. p. 186. The White Blood Corpuscles a Connecting Link. p. 187. Markings of Battledoor Scales. p. 187. Structure of Infusoria. p. 187. The Goniometer Stage. p. 187. A Drying Case. p. 245. An Object Carrier. p. 245. Nobert's Lines. p. 246. Resolving-objectives. p. 246. Microscopic Writing. p. 246. Animalcules in Buttermilk. p. 248. Amphipleura pellucida in Dots. p. 316. A New Slide for the Microscope. *Illustrated.* p. 376. Aërial Stage Micrometers. p. 378. The Micro-spectroscope. p. 379. Blights on Tea and Cotton. p. 379. Iridescent Engraving. p. 380. Apertures of Objectives. p. 380. Students' Microscopes. p. 381. A New Ocular Micrometer. p. 381. Blood-disks of the Salmon. p. 381. The Highest Power. p. 381. Red Blood Corpuscles. p. 382. Nature of Markings. p. 382. Microscopic Toys. p. 382. The Value of Illumination. p. 382. A New Society. p. 382. Apertures of Objectives. p. 440. Mounting in Balsam. p. 442. Unmounted Microscopic Objects. p. 443. Resolution of Frustulia Saxonica into Rows of Dots. p. 443. Mould on Bread. p. 444. Effects of Dyeing Wool. p. 444. Microscopic Eyes. p. 444. Economical Value of Raphides. p. 445. Pathology of Malignant Tumors. p. 445. Vitality from Germs. p. 445. Obituary. p. 445. Improvement in Objectives. p. 504. Tolles' Triplets. p. 507. Apertures of Objectives. p. 566. Microscopical Experiments with Insects' Eyes. p. 570. Binoculars for High Powers. p. 571. Structure of Eupodiscus and Isthmia. p. 571. A New Chimney for Microscope Lamps. p. 636. Separating Diatoms. *Illustrated.* p. 637. Note on a New One-seventy-fifth Objective. p. 638. Wales. p. 638. A New Growing-cell. *Illustrated.* p. 698. Revival of Animalcules after Desiccation. p. 698. Action of Poisons on the Blood Corpuscles. p. 700. Limit of Resolving Power. p. 700. Use of Micro-photographs. p. 701. Structure of Diatoms. p. 701. Methods of Study in Infusoria. p. 702. Correction to Note on Aperture. p. 702. Exudations of Diphtheria and Croup. p. 756. Unusable Objectives. p. 757. Mounting in Balsam. p. 757. Preserving Tumors, etc., during Transportation. p. 758. Amphipleura pellucida as a Test Object. p. 758.

NOTES. pp. 59, 123, 188, 249, 317, 382, 445, 507, 573, 638, 702, 758.

ANSWERS TO CORRESPONDENTS. pp. 64, 192, 576, 704.

BOOKS RECEIVED. pp. 64, 128, 192, 384, 448, 512, 576, 704, 762.

Appendix. REPLY TO PROF. COPE'S EXPLANATION IN MAY NATURALIST. BY PROF. O. C. MARSH (June number). ON PROF. MARSH'S CRITICISMS. BY E. D. COPE (July number).

ERRATA.

Page 115, line 9, for Maynard *read* May. Page 177, line 16, for females (workers and queens) *read* drones, and in line 17, for drones *read* females (workers and queens). Page 228, lines 3 and 10 from bottom, for Bagshot *read* Bagehot. Page 530, Fig. 138 is not taken from Harris' work, but from Riley's Report on Injurious Insects of Missouri. Page 544, Fig. 147 is upside down. Page 567, line 1, for improved *read* unproved.

LIST OF PLATES.

Plate.		Page.
1, 2.	Dinoceras mirabilis Marsh,	152
3.	Anatomy of Winter Buds of Duckweed,	267
4, 5.	Loxolophodon cornutus Cope,	299

LIST OF WOOD-CUTS.

No.		Page.
1.	Poison Ivy,	6
2.	Virginia Creeper,	7
3.	Poison Dogwood,	8
4.	Water Hemlock,	10
5, *a*, *b*.	Harvest Mites,	18
6.	New Accessory Stage,	53
7, 8.	Diagram Illustrating Magnifying Power of Objectives,	54
9.	Octopus,	89
10.	Jaw of Architeuthis dux,	93
11, 12.	Water Jugs of Mound-builders,	95, 96
13.	Statuette of Mound-build's,	97
14, 15.	Water Jugs of Mound-builders,	98
16.	Ancient Mexican Vessel,	99
17.	Pottery of Swiss Bronze Age,	99
18.	Drinking Cup,	99
19.	Pipe from a Mound,	99
20–23.	Urns of Mound-builders,	100, 101
24, 25.	Ancient Pottery,	101, 102
26–29.	Spores of Fungi,	121, 122
30, 31.	Netsinkers,	140
32.	Hammerstone,	141
33.	Embryo of Polynema,	176
34.	Viviparous Fly and Pupa-rium,	194
35.	Larva of Flesh Fly,	195
36–38.	Drift Implements of New Jersey,	206–208
39.	Boll Worm,	204
40.	Cotton Caterpillar,	204
41.	Onion Thrips,	241
42.	Parasite of Cabbage Caterpillar,	241
43.	Tachina Larva,	242
44.	Cabbage Web Moth,	242
45, 46.	Radish Weevil,	242
47.	Garden Weevil,	243
48.	Raspberry Saw Fly,	243
49.	Chestnut Weevil,	243
50.	Balaninus,	243
52.	Chestnut Borer,	243
52.	Elm Borer,	243
53–56.	Anatomy of Winter Bud of Duckweed,	258–267
57.	Mud Puff, Hot Springs,	280
58.	Beehive Hot Spring,	281
59, 60.	Grand Geyser,	282, 283
61.	Punch Bowl Hot Spring,	284
62.	Giant Geyser,	285
63.	"Old Faithful" Geyser,	286
64.	Ideal Section of Geyser Basin,	287
65.	Head of Brown Thrush,	327
66.	Head of Californian Mocking-thrush,	328
67.	Head of Crissal Mocking-thrush,	328
68.	Head of Curved-billed Mocking-thrush,	329
69.	Head of Bendire's Mocking-thrush,	329
70.	Head of St. Lucas Mocking-thrush,	330
71.	Liberty Cap Geyser,	353
72.	Great Hot Spring,	354
73.	Falls of Yellowstone,	356
74.	Monstrous Pig,	367
75.	Slide for Microscope,	377
76, 77.	Octopus Bairdii,	395
78–105.	Pedicellariæ,	399–405
106.	Dredge with tangles,	407
107.	Bathybius Hæckelii,	408
108.	Holtenia Carpenteri,	409
109.	Lophohelia prolifera,	410
110.	Rhizocrinus Loffotensis,	411
111.	Archaster vexillifer,	412
112.	Pourtalesia Jeffreysii,	413
113.	Arcturus Baffini,	414
114.	Carved Stone from Ipswich,	483
115.	Pimpla,	471
116.	Macrocentrus,	472
117.	Apple Bark Louse, Male,	473
118.	Pine Bark Louse, Male,	473
119.	Pine Bark Louse, Female,	474
120.	Hickory Scolytus,	474
121–123.	Hemileuca Maia,	475
124–127.	Hyperchiria Io,	476, 477
129, 130.	Yucca Moth,	477
131–137.	Skin Scrapers,	502, 503
138.	May beetle,	530
139, 140.	Goldsmith Beetle,	530, 531
141.	Grub of Bean Weevil,	537
142, 143.	Seventeen year locust,	540, 541
144.	Cicada pruinosa. pupa,	542
145.	Cicada rimosa, pupa,	542
146.	Brachys larva,	543
147.	Metonius larva,	544
148, 149.	Languria,	545
150.	Dacne, larva and pupa,	545
151.	Lady-bird, larva,	546
152.	Aphis-eating mite,	547
153.	Spring tap,	637
154–157.	Ovarian egg of Dog,	650
158–160.	" " " Rabbit,	651
161.	" " " human female,	651
162–169.	Egg of Dog,	651, 652
170–173.	Young blenny,	655
174.	Growing cell,	698
175.	Three Tétons,	727
176.	Basaltic Columns, Yellowstone,	730
177.	Index and Pilot Peaks,	731
178.	Extinct Geyser, Yellowstone,	732
179.	Terraces of Madison,	734
180.	Gerardia perforated by bees	740
181.	Macrobiotus Americanus,	741